

Characteristics of Solids, Liquids and Gases
Grade 7 Science
Mrs. Astbury

Name_____ Block_____

Directions

1. Read each situation carefully in your group.
2. Share your thoughts within your group. Everyone speaks.
3. Answer the questions as completely as possible. Remember to tell what you think and why you think it.
4. Complete all sketches in your sketch book using colored pencils. Give each sketch an appropriate title.
5. Each sketch should be done on the top half of a page of your sketch pad. Leave the bottom half blank.

1. What a Riot!!!!

Riot police sometimes have to use tear gas to control an angry group of people. Imagine that a large group of people have gathered on the lawn in front of the State House to protest a law that they disagree with. About fifty feet away, another group that feels that law is just and fair has also gathered to express their opinion. Each group is chanting and yelling. Some people from the front of each group begin to yell at each other and exchange unpleasant words. Soon, a fight between two people breaks out. Very rapidly, the two person fight becomes a giant fight between the two groups, which add up to about 50 people.

Police are unable to control the mob of fighting people, so the riot police are called. When they arrive, they have large canisters of tear gas. There is a hose and a nozzle with a handle on it. When you squeeze the handle, a small, thick cloud of tear gas comes out very rapidly and makes a hissing noise.

Why do you think the tear gas comes out quickly and makes a hissing noise?

The riot police are wearing masks to help them breathe fresh oxygen and keep the tear gas away from themselves. Five officers, spaced evenly on the edges of the crowd, begin to spray the tear gas throughout the crowd. **Describe what you think will happen after the tear gas leaves the canister and why you think that.**

Make a sketch in your sketch pad of how you think the tear gas looks when it is inside the canister, when it comes out, and when it starts spreading out. Include three observations and three explanations.

What do you think would happen if this all happened inside the statehouse in the lobby? What would be different when the tear gas was released? Why?

Make a sketch showing how spraying tear gas inside the building would look different than if it was sprayed outside. Include three observations and three explanations.

2. The MacGillicutty family has installed an above ground pool in their back yard. Their back yard is rectangular in shape and has a six foot wooden fence surrounding it. The MacGillicutty children, Cornelius, Evangaline and Billy Bob, are very excited to begin using their new pool. It holds 14,000 gallons of water. A water truck with a large, metal tank comes and fills the pool up to its capacity. The pool is now ready for swimming! In their excitement to get right in the water, the children neglect to close the gate to the pool area. Bowser, the family dog, sneaks through the gate and jumps right into the pool with them. Cornelius was supposed to clip Bowser's toe nails that day, but he did not. Bowser makes a large tear in the liner of the pool when he is doggy paddling. Before they can say, "Oh my!", water is pouring out of the pool on to the ground. Describe what you think their yard will look like if all the water leaks out.

Make a sketch showing what the water looks like when it is in the pool, when it is leaking out, and after it leaks out. Include three observations and three explanations.

What do you think their yard would look like if they did not have a fence?

Make a sketch showing how the yard would look without the fence. Three observations, three explanations.

3. Melting a Candle

Imagine that a candle is placed inside a test tube. The test tube is then held over a bunsen burner for several minutes. How would the candle change? Why do you think so?

Make a sketch showing the candle before being held over the burner, half way through and at the end. Include three observations and three explanations.